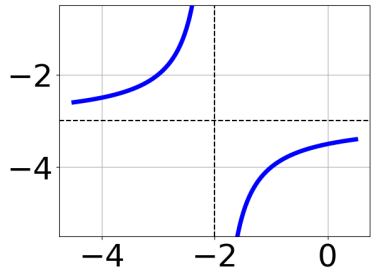
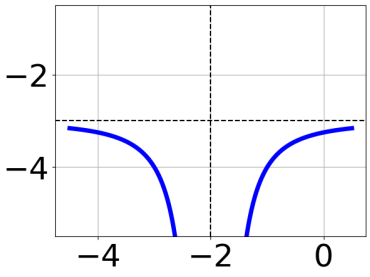
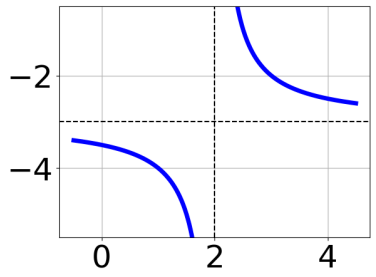
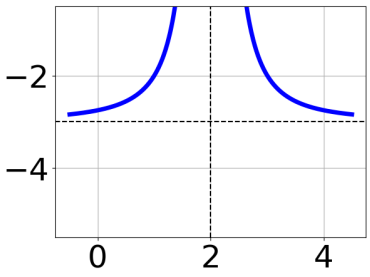
1. Choose the graph of the equation below.

$$f(x) = \frac{1}{(x-2)^2} - 3$$

A. 


C. 


B. 


D. 


E. None of the above.

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2. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{8}{5x-5} + 5 = \frac{-2}{40x-40}$$

A. $x \in [-1.35, -1.3]$

B. $x_1 \in [0.58, 0.63]$ and $x_2 \in [-0.33, 2.67]$

C. $x \in [0.67, 2.67]$

D. All solutions lead to invalid or complex values in the equation.

E. $x_1 \in [-1.35, -1.3]$ and $x_2 \in [-0.33, 2.67]$

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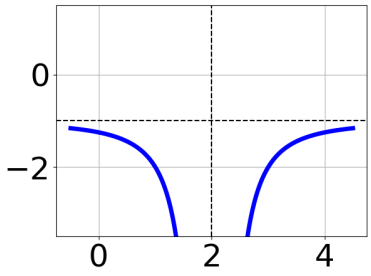
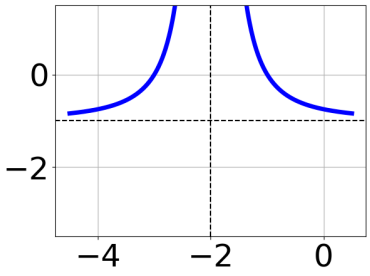
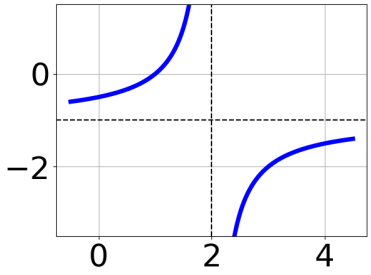
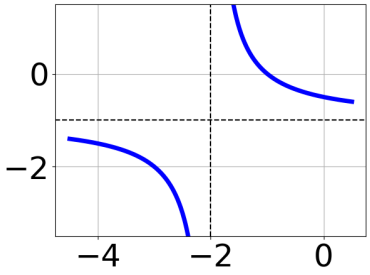
3. Choose the graph of the equation below.

$$f(x) = \frac{-1}{(x-2)^2} - 1$$

A. 


C. 


B. 


D. 


E. None of the above.

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4. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{50}{20x+90}+1=\frac{50}{20x+90}$$

A. $x \in [-5.5, -2.5]$

B. $x \in [3.5, 6.5]$

C. All solutions lead to invalid or complex values in the equation.

D. $x_1 \in [-5.5, -3.5]$ and $x_2 \in [-5.5, -2.5]$

E. $x_1 \in [-5.5, -3.5]$ and $x_2 \in [3.5, 6.5]$

---

5. Determine the domain of the function below.

$$f(x)=\frac{3}{20x^2-45x+25}$$

A. All Real numbers except $x = a,$ where $a \in [-0.9, 1.2]$

B. All Real numbers.

C. All Real numbers except $x = a$ and $x = b$, where $a \in [-0.9, 1.2]$ and $b \in [1.1, 1.6]$

D. All Real numbers except $x = a$, where $a \in [19.7, 21.6]$

E. All Real numbers except $x = a$ and $x = b$, where $a \in [19.7, 21.6]$ and $b \in [23.9, 26.9]$

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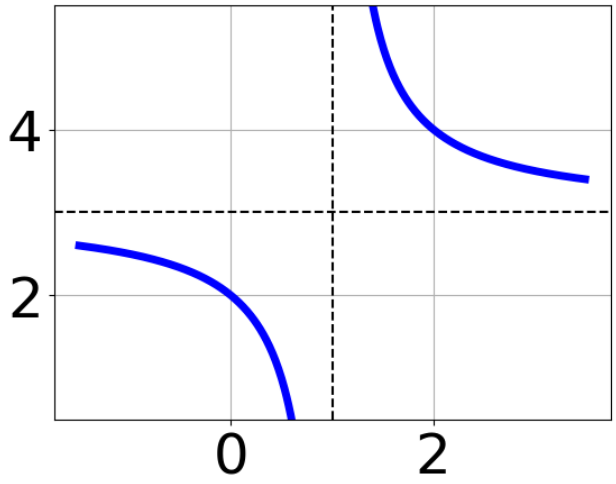
6. Choose the equation of the function graphed below.




A. $f(x) = \dfrac{1}{x-1} + 3$

B. $f(x) = \dfrac{1}{(x-1)^2} + 3$

C. $f(x) = \dfrac{-1}{x+1} + 3$

D. $f(x) = \dfrac{-1}{(x+1)^2} + 3$

E. None of the above

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7. Determine the domain of the function below.

$$f(x) = \frac{5}{30x^2 + 12x - 18}$$

A. All Real numbers.

B. All Real numbers except $x = a$, where $a \in [-38, -35]$

C. All Real numbers except $x = a$ and $x = b$, where $a \in [-38, -35]$ and $b \in [15, 17]$

D. All Real numbers except $x = a$, where $a \in [-3, 0]$

E. All Real numbers except $x = a$ and $x = b$, where $a \in [-3, 0]$ and $b \in [0.6, 1.6]$

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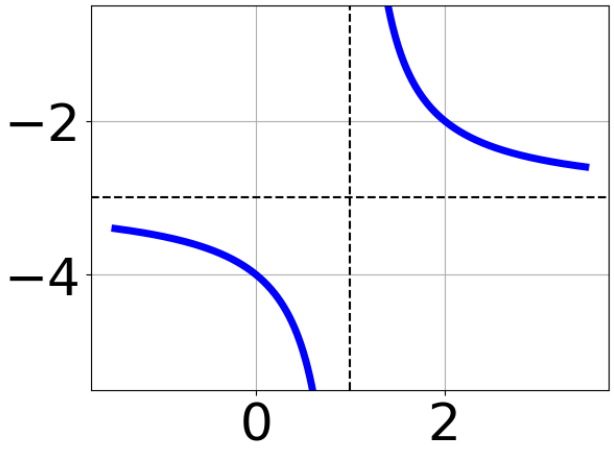
8. Choose the equation of the function graphed below.




A. $f(x) = \dfrac{1}{(x-1)^2} - 3$

B. $f(x) = \dfrac{-1}{(x+1)^2} - 3$

C. $f(x) = \dfrac{1}{x-1} - 3$

D. $f(x) = \dfrac{-1}{x+1} - 3$

E. None of the above

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9. Solve the rational equation below. Then, choose the interval(s) that

the solution(s) belongs to.

$$\frac{-5x}{-6x+3} + \frac{-7x^2}{24x^2-36x+12} = \frac{5}{-4x+4}$$

A. $x_1 \in [0.64, 0.78]$ and $x_2 \in [-2.37, 0.11]$

B. $x \in [0.86, 1.04]$

C. $x_1 \in [0.64, 0.78]$ and $x_2 \in [-0.58, 1.58]$

D. All solutions lead to invalid or complex values in the equation.

E. $x \in [-1.77, -1.5]$

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10. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{5x}{3x-6} + \frac{-2x^2}{-12x^2+12x+24} = \frac{-4}{-4x-4}$$

A. $x_1 \in [1.77, 3.6]$ and $x_2 \in [-1.17, -0.95]$

B. $x \in [-2.56, 0.83]$

C. $x \in [1.77, 3.6]$

D. $x_1 \in [-0.3, 0.93]$ and $x_2 \in [-2.17, -1.08]$

E. All solutions lead to invalid or complex values in the equation.

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